

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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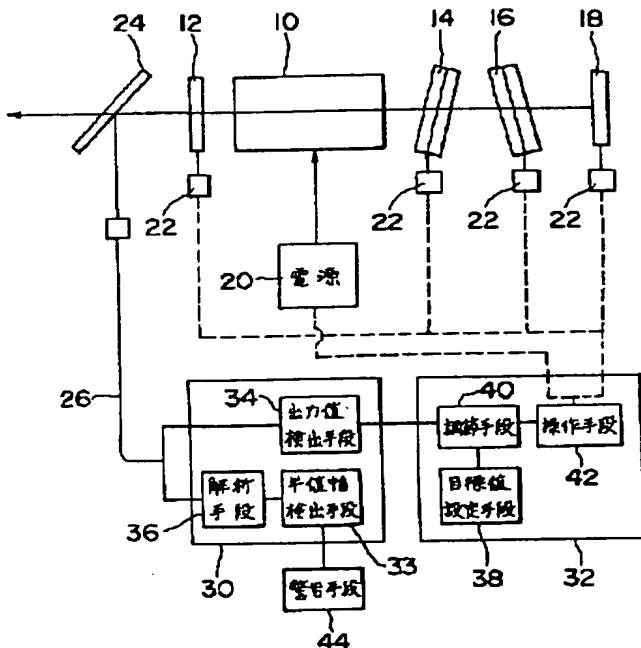
APPLICATION DATE : 11-10-91  
 APPLICATION NUMBER : 03264092

APPLICANT : MITSUI PETROCHEM IND LTD;

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TITLE : METHOD AND DEVICE FOR  
 STABILIZING OUTPUT OF LASER



**ABSTRACT :** PURPOSE: To detect the deterioration of an optical element and to contrive a high-accuracy control of the output of the element by a method wherein the half-width of the peak value of the waveform of a narrow-band spectrum obtainable by making a spectral analysis of a laser beam to be outputted is monitored.

**CONSTITUTION:** An output detecting means (an output order detecting means) 34 for detecting the output value of a laser beam sampled by a beam splitter 24, an analyzing means 36 for making a spectral analysis of the sampled laser beam and a half-width detecting means 33 for detecting the half-width of the peak value of the waveform of an obtained narrow-band spectrum are provided in a wavelength and output monitor 30. A laser beam constituting interference fringes, which are diffracted by a monitoring etalon and are formed in a concentric circle form, is emitted on a one-dimensional photodetector array and the intensity distribution of the interference fringes is detected. The peak value of the waveform of the central interference fringes is detected by the means 33 and the half-width is detected from the value. In the case where a set half-width is compared with the detected half-width and the detected half-width exceeds the set half-width, a warning sign or the like is sent by a warning means 44. Or a laser oscillation is stopped.

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